IN THE CLAIMS

1. (Currently Amended) A nuclear medical diagnostic apparatus, comprising:

a radiation detector in a form of a single layer including a plurality of semiconductor cells that (1) are arranged in a matrix, (2) detect radiation separately, and (3) output signals representing an energy of the radiation separately;

a selection circuit which, in order to select, among events wherein the radiation is detected, a specific event wherein radiation derived from a radio-isotope injected into a subject is detected and a total energy of not less than two respective signals substantially simultaneously output from not less than two semiconductor cells falls in a predetermined energy window;

a position calculation circuit configured (1) to select one semiconductor cell of said not less than two semiconductor cells based only on respective energies of the not less than two respective signals, and (2) to calculate an incidence position based on a position of the selected one semiconductor cell;

a counting circuit configured to count the specific event in association with the calculated incidence position; and

a circuit configured to generate a distribution of radio-isotope in the subject on the basis of a counting result,

wherein said position calculation circuit is configured to select, from said not less than two semiconductor cells, said one semiconductor cell that outputs a signal representing a minimum energy, when said not less than two semiconductor cells are located in a first area, and to select said one semiconductor cell that outputs a signal representing a maximum energy, when said not less than two semiconductor cells are located in a second area.

2. (Canceled).

3. (Canceled).

4. (Canceled).

5. (Previously Presented) A nuclear medical diagnostic apparatus, comprising:

a radiation detector in a form of a single layer including a plurality of semiconductor cells that (1) are arranged in a matrix, (2) detect radiation separately, and (3) output signals representing an energy of the radiation separately;

a selection circuit which, in order to select, among events wherein the radiation is detected, a specific event wherein radiation derived from a radio-isotope injected into a subject is detected and a total energy of not less than two respective signals substantially simultaneously output from not less than two semiconductor cells falls in a predetermined energy window;

a position calculation circuit configured (1) to select one semiconductor cell of said not less than two semiconductor cells, and (2) to calculate an incidence position based on a position of the selected one semiconductor cell;

a counting circuit configured to count the specific event in association with the calculated incidence position; and

a circuit configured to generate a distribution of radio-isotope in the subject on the basis of a counting result of the counting circuit,

wherein said position calculation circuit is configured to select, from said not less than two semiconductor cells, said one semiconductor cell that outputs a signal representing a minimum energy, when said not less than two semiconductor cells are located in a first area,

and to select said one semiconductor cell that outputs a signal representing a maximum energy, when said not less than two semiconductor cells are located in a second area.

6. (Original) An apparatus according to claim 1, wherein said selection circuit is configured to calculate time differences between a signal output from one of said plurality of semiconductor cells and signals output from remaining cells of said plurality of semiconductor cells.

7. (Currently Amended) A method for generating a distribution of a radio-isotope in a subject with a nuclear medical diagnostic apparatus including a radiation detector in a form of a single layer, the radiation detector having a plurality of semiconductor cells arranged in a matrix, comprising:

detecting radiation derived from the radio-isotope with the plurality of semiconductor cells that output respective signals;

comparing a total energy of not less than two respective signals output from not less than two semiconductor cells with a predetermined energy window;

selecting one semiconductor cell of said not less than two semiconductor cells based only on respective energies of the not less than two respective signals; and

calculating an incident position of the radiation based on a position of only the selected one semiconductor cell,

wherein said selecting step comprises selecting, from said not less than two semiconductor cells, said one semiconductor cell that outputs a signal representing a minimum energy, when said not less than two semiconductor cells are located in a first area, and to select said one semiconductor cell that outputs a signal representing a maximum energy, when said not less than two semiconductor cells are located in a second area.

8. (Previously Presented) The apparatus of claim 1, wherein the position calculation circuit is configured to calculate the incidence position as a central position of the selected one semiconductor cell.

9. (Previously Presented) The method of claim 7, wherein the calculating step comprises:

calculating the incidence position as a central position of the selected one semiconductor cell.